Synopsis of the Thesis entitled

"Assessment of increased level of noise pollution and it's effects on public health in Nanded city, Maharashta, India."

To be Submitted to

Swami Ramanand Teerth Marathwada University, Nanded.

For the Award of Degree of
Doctorate of Philosophy in Environmental Science
Under the Faculty of Science Technology

Submitted by
Gaikwad Priyanka Rajratna
Research Student
Netaji Subhaschandra Bose
Arts, Commerce And Science Collage Nanded.

Under the Guidence of
Dr. K.B.Patil
Assistant Professor
Hutatma Jaywantrao Patil College,
Himayatnagar Tq. Himayatnagar,
Dist. Nanded-431802

Introduction:

Noise is a type of pollution and has adverse impacts on health and wellness of human beings in the world. The prevalence of noise pollution is increasing day by day with its severity because of the urban life style. The study identified vehicular pollution as one of the main cause of noise pollution and loud music celebrations of public event's religious festivals are another major cause of noise pollution in India. The study examines the problem of noise pollution in the wake of its ill effects on the life of the people. Noise produces direct and cumulative adverse effects that impart health and degrade residential, social and working environment with corresponding real and intangible losses. Noise has been a noteworthy supporter of irritation, which is substantiated by the aftereffect of ceaseless observing commotion at proportionate levels of public interest, training, administration, auxiliary outlining assumes a noteworthy part in noise administration. Noise represents an important health problem that can lead to hearing loss, sleep disruption, cardiovascular disease, reduce productivity, negative social behavior, annoyance reactions, absenteeism etc. Noise, adversely affects general health and well- being in the same way as does chronic stress. The present study deals with the increased level of noise pollution in Nanded city, as Nanded is emerging as fast growing municipal corporation with tremendous change in life style, increased traffic conjestion, increased. Industrial as well as commercial activities and also religious festivals & celebrations, which give add on inpacts on the public health.

Noise is derived from the Latin word "nausea" implying 'unwanted sound' or 'sound that is loud, unpleasant or unexpected. In general, the noise pollution is a byproduct of some essential functions or activities. Most of the pollutant can be tolerated up to a certain level, the level being dependent on the type of the pollutant. Therefore, it is almost impossible to completely eliminate the pollutant, but it can be controlled or reduced. When the level of pollution continues to increase, it becomes necessary to know the amount by which the permissible limit has been exceeded so that their increase can be checked by the introduction of suitable regulations. To know the level of pollution the pollutant has to be measured. In the case of noise pollution, measurements are all the more essential because of the incapability of our auditory system to recognize slow changes in the noise levels.

Noise, a physical pollutant, is not easily recognized. This is because the sensitivity of human ear gets automatically adjusted to the ambient level of sound and therefore slow increases in the ambient level go unnoticed. Therefore noise continues to do the damage, silently. Noise pollution in the environment has been a unique situation which makes it difficult to tolerably compare noise with other environmental pollutants.

Although it is tempting to consider its analogy with water, air or solid waste problems, noise should be considered a totally separate entity. Noise pollution is a major problem for the quality of life in urban areas. Noise affects everybody and is

likely to continue as a major issue well in future. Though noise pollution is a slow and subtle killer, yet very little efforts have been made to ameliorate the same. Only in the European Union more than 270 millions citizens are affected by noise pollution caused by traffic, industrial and recreational activities. Extended exposure to excessive sound has been proved physical and psychological damage. Because of its annoyance and disturbance implications, noise adds to mental stress and hence affects the general well being of those exposed to it. Noise is a major source of friction among individuals. To understand noise we must understand the different types of noise, where noise comes from, the effect of noise on humans and the various ways of measuring it, and its hazards.

Noise is a disturbance to the human environment that is escalating at such a high rate that it will become a major threat to the quality of human lives. In the past thirty years, noise in all areas, especially in urban areas, has been increasing rapidly. In India, the problem of noise pollution is wide spread. Several studies report that noise level in metropolitan cities exceeds specified standard limits. It is responsible for rising incidence of deafness among the inhabitants and also there are numerous effects on the human environment due to the increase in noise pollution. The influence of noise on the human body can be due to the direct effects upon the auditory system, on non-auditory physiological processes and on purely psychological mechanisms.

Review of Literature

This study assessed traffic noise pollution in Banepa, a semi urban town of Nepal and found that the overall minimum and maximum levels for the main road are 60.1 dB(A) and 110.2 dB(A). The noise levels produced by different motor vehicles ranged from 121 to 91.2 dB(A). The study observes motor vehicles as main source in the town. (Murthy *et al.,* (2007))

Investigated the noise pressure level and difficulties faced by the workers in the textile industries during their work and measured sound pressure level in the range from 101.6dBA to 109.8dBA from the industry, which was exceeding the standards of OSHA and WHO (World Health Organization) standards. (Abbasi *et al.,* (2011))

He had taken a survey in the cities of State of Maharashtra during Ganesh Festival in the month of Aug 27-Sept 7, 2006 to assess the situation of noise levels in various cities in the state of Maharashtra and found that noise levels were exceeding the permissiblelimits during the festival period. In Aurangabad city, it was observed that minimum noise level was ranging from 52 to 82.9 dB(A) and maximum level was ranging from 73.2 to 115 dB(A). (Maharashtra Pollution Control Board (MPCB) (2006))

He also taken same type of the survey during Diwali Festival in previous year and found that noise levels at all locations was in the range of 55-75 dB(A). These

values are higher than the stipulated limit of 55 dB for day time and 45 dB for night. The noise levels were much higher during 8 and 9 pm. Peak levels of noise were found as high as 118 dB(A) at ground floor at 4m distance from fire cracking area. However, this level was found intermittently only during the fire cracking.(Maharashtra Pollution Control Board (MPCB) (2005))

They carried out the survey in the year 2007 and found that sound level Leq during the survey ranged from 65.2 to 114.1 dB(A). Maharashtra Pollution Control Board (MPCB) (2007)

They studied the noise exposure from the textile industries and showed that a large number of textile workers, especially weavers suffer from industrial hearing loss. He suggested, there should be substantial efforts by machinery manufacturers, in keeping the noise emission as low as possible while improving the speed of their machines. (Talukdar (2001))

He computed Leq and other noise descriptors and found that noise levels reached up to 101 dB in Bus stand and Leq was 90.58 dB. In residential areas, L10 values were above 85-90 dB.(Ravichandran *et al.,* (2000))

He measured sound pressure levels in platforms of different stations in Calcutta and their results indicated that the averaged A-weighted SPLs in these stations were in the range of 84-87 dB. In the coaches of the moving train Leq values ranged 92-99 dB. (Bhattacharya (1996))

This study examines the problem of noise pollution in the wake of its ill effect on the life of the people. A crosssection survey of the population in Delhi State points out that main sources of noise pollution are loudspeakers and automobiles.

However, female population is affected by religious noise a little more than male population. Major effects of noise pollution include interference with communication, sleeplessness, and reduced efficiency. The extreme effects e.g. deafness and mental breakdown neither is ruled out. Generally, a request to reduce or stop the noise is made out by the aggrieved party. (Narendra Singh and S. C. Davar)

Noise interferes in complex task performance, modifies social behaviour and causes annoyance. Studies of occupational and environmental noise exposure suggest an association with hypertension, whereas community studies show only weak relationships between noise and cardiovascular disease. Aircraft and road traffic noise exposure are associated with psychological symptoms but not with clinically defined psychiatric disorder. (Stephen A Stansfeld and Mark P Matheson)

He has made evaluation and analysis of environmental noise of Arak, Iran and his results indicate that daily average sound levels due to road traffic exceeds envi-

ronmental standards by about 10 dBA and more than 30% of the residents should be highly disturbed by road traffic noise. (Mirhossaini and Pourzamani (2008))

He has evaluated the noise level in Kerman Cement Plant of Iran in the year 2009 and according to the standard ISO 9612:1997 (E) in workers main commuting spots he measure the noise level by the standard SLM device (Model CEL-815) analyzed gathered data in the EXCEL application software. The 106 dB sound pressure level recorded from stone crushing units and the grinding units (mills) and other units had crossed the permissible limits i.e 85 dB of sound pressure level in Kerman Cement Plant. (Ghotbi *et al.,* (2011))

The potential health effects of noise pollution are numerous, pervasive, persistent, medically and socially significant. Noise produces direct and cumulative adverse effects that impair health and that degrade residential, social and working environment with corresponding real (economic) and intangible (well-being) losses. Noise represents an important public health problem that can lead to hearing loss, sleep disruption, cardiovascular disease, social handicaps, reduced productivity, negative social behaviour, annoyance reactions, absenteeism and accidents. It can impair the ability to enjoy one's property and leisure time and increases the frequency of antisocial behaviour. (Minarva J. Pandya, Yogesh M. Gajera)

The present study was conducted to study the noise level from different locations in Mumbai. Our observations suggest that most of the localities in Mumbai are at high risk of noise pollution. (Leena Muralidharan ., Sangeeta Gaur., Chinmay Muralidharan.)

Study Area

Nanded is a city in Maharashtra state, India. It is the tenth largest city in the state and the seventy-ninth most populous city in India. It is the second largest city in Marathwada region. It is the district headquarters of Nanded district.

Nanded is located on the banks of river Godavari in west-central India. Nanded district borders Latur district, Parbhani district and Hingoli district to the west and Yavatmal district to the north. The district is bordered by the Nizamabad, Kamareddy, Nirmal and Adilabad districts of Telangana state to the east and Bidar district of Karnataka state to the south.

Nanded has two parts: Old Nanded 20.62 square kilometres (7.96 sq mi) occupies the north bank of the Godavari river; New Nanded, to the south of the river, 31.14 square kilometres (12.02 sq mi) encompasses Waghala and neighbourhoods.

Nanded urban area is 63.22 square kilometres (24.41 sq mi). Nanded is built on the Deccan Traps lava flows of the upper cretaceous to lower eocene eras. The lava flows are overlain by thin alluvial deposits. The lava flows are horizontal and each flow has two distinct units. The highly weathered vesicular trap and underlying weathered jointed and fractured massive trap constitutes the main water-yielding

zones. The soil is mostly formed from igneous rocks and are black, medium black, shallow and calcareous types having different depths and profiles. Godavari river passes through the city.

Objective of research:

1) To Study the present status of noise pollution in various sites of Nanded city.
2) To study the health effects of noise pollution & its severity
3) To findout the responsible sources of noise pollution in Nanded City.
4) To study the latest developments of methods for the control of noise pollution.
5) To suggest remedial measures to control noise pollution and develop awareness in Nanded city.

Methodology:

The proposed study will be carried out by Integrating sound level meter (ISLM),

Data will be collected from various sites of Nanded city. The health effects will be assessed by the survey of various hospitls, nearby residents of the study cites and the condition of the patients.

Importance of study:

Nanded is the emerging city in India, as India is going to be an lead over the world in coming year so the status of the India before the world should be clear in all respects specially environmental safety & sustainable life style. In the present investigation the Indian policies for environmental safety should emerged through the various studies As Nanded is also the second most area regarding the industrial development of marathwada in Maharashtra state. Hence, the level of noise pollutants in Nanded and their impacts on biological aspects, human beings should taking in to consideration for the further sustainable development of the city. The present study reviles the productive values ofthe region regarding over exploration of industrial area in metro cities which leads to help the development of litter cities of the country for the coming Indian revolution before the in all respects.

International Status:

Many people don't realise noise pollution is an important problem, impacting human health, including theirs. Of course, there are many more premature deaths associated with air pollution than for noise. However, noise seems to have a larger impact on indicators related to quality of life and mental health. In fact, according to some World Health Organization (WHO) findings, noise is the second largest environmental cause of health problems, just after the impact of air pollution (particulate matter).

Countries, regions and cities are taking a variety of measures to address noise problems. For instance, installing low noise asphalt on roads, using quiet tyres in public transport vehicles, putting more infrastructure for electric cars in cities, promoting active travel like walking or cycling, pedestrianisation of streets, etc. A

significant number of cities and regions have also put in place so-called quiet areas, where people can go to escape city noise. These are mostly green spaces, like parks or nature reserves.

National Status

To defeat noise pollution, international organizations like the WHO recommend raising awareness. Avoid noisy leisure activities, use bicycles or electric vehicles instead of cars, undertake chores at appropriate times, insulate homes with noise-absorbing materials, etc. In 2008, the Mumbai Police and Awaaz Foundation staged the first "No Honking Day" in Mumbai, where 16,000 drivers were ticketed. To reduce noise, Delhi outlawed pressure horns, modified silencers, and excessive honking in 2022. On Saturday, the Delhi Traffic Police announced a special operation to penalize drivers who use pressure horns and modified silencers, which many commuters on Twitter applauded.

Plan of proposed work:

First Year: Literature survey and collection of baseline data regarding the existing status of the noise pollution of the study area will be carried out.

Second Year: Analysis of samples & data collection. Literature review. Preparation & publication of research paper.

Third Year: Study of noise pollution index; interpretation of results; thesis writing and submission.

Organization of work

The work will be divided into five Chapters

Chapter – I: Introduction-

The introduction of thesis will be summarized in this topic and its national and international status will be given in it, along with why problem has been selected.

Chapter – II: Study area-

This topic will contain the details of study area where work is to be carried out.

Chapter – III: Materials and methods-

The details of materials and methods used for work will be summarized in this topic.

Chapter - IV: Results and Discussion

The results of work will be discussed with appropriate references by giving suitable reasoning. The summary and conclusion will be included in this topic at last with recommendations.

Chapter – V: References

The cited references in introduction, materials and methods, and discussion will be summarized in this topic.

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Hiral J. Jariwala, Huma S. Syed,
Minarva J. Pandya, Yogesh M. Gajera "Noise Pollution & Human Health A Review" Student of M.E.(Environmental Management), L. D. College of Engineering, Ahmedabad, Gujarat, India 2,3,4Associate Professor, Department of Environmental Engineering,
L. D. College of Engineering, Ahmedabad, Gujarat, India .

Leena Muralidharan ., Sangeeta Gaur., Chinmay Muralidharan.
Associate professor., Assistant Lecturer., student Department of Zoology.,V.K.K.Menon College of Commerce
and S. S. Dighe College of Science, Bhandup (east), Mumbai 400042, India.

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Research Studant

(Miss.Priyanka R. Gaikwad)

Research Supervisor

(Dr. K.B. Patil)